

are, and long have been, definite features of the apparent regional centers of the Old World, and in the Palearctic regions mentioned where the Melanoplinae are absent purely montane species represent other groups of insects. On the other hand in the Nearctic they apparently occupied, and still occupy, almost every type of environment, persisted through the sweeping Pleistocene glaciations, and there developed into one of the most highly diversified existing tribes of the Acridoidea. To disregard the evidence of an existing fauna of remarkable complexity—clearly not a development of a short period of time—is hardly justifiable today. Much of the manner of thought which failed to grasp the obvious conclusion here reached, has been due to an absence of first-hand acquaintance with the elements of some of the faunas involved, and a lack of knowledge of the very broad adaptability to almost all types of environments found in many of the Nearctic Melanoplinae. A personal comprehension of the field conditions under which all but two of the Nearctic genera live has enabled me to approach this problem with an open mind. It has been my privilege to study either in the field or in the laboratory, or in both, all the genera and all but a very limited number of the species or subspecies of Nearctic and Neotropical Melanoplinae, and as laboratory material all but a few of the genera and the majority of the species of the same known from Eurasia.

A New Milliped of the Genus *Cylindrodesmus* from Palmyra Island

By RALPH V. CHAMBERLIN, University of Utah

In a small but interesting collection of chilopods and diplopods collected in Hawaiian and other Pacific islands were specimens of a new species of the genus *Cylindrodesmus* taken on Palmyra Id. in 1948. These and the other specimens of the collection were made by N. L. H. Krauss, through whose courtesy I have been privileged to study the material. The species here described makes the third to become known in *Cylindrodesmus*, the others being *C. hirsutus* Poc., the genero-

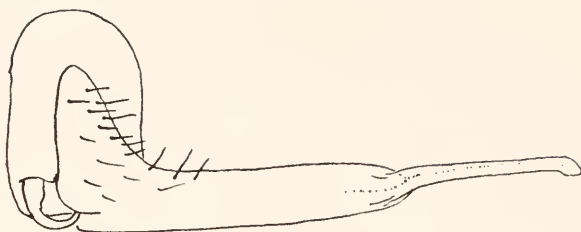


FIG. 1. *Cylindrodesmus palmyrae* n. sp. Right gonopod of male, ventral aspect.

type which is native to Java and other East Indian islands, and *C. villosus* Poc. of Rotuna. In addition Dr. Schubart records what he regards as a distinct variety of *C. hirsutus* from Brazil.

***Cylindrodesmus palmyrae* new species**

Body moniliform, the prozonites being conspicuously less in diameter than the metazonites. The metazonites convex both antero-posteriorly and transversely. Head above and in front with the typical clothing of dense, short hairs, laterally with some longer ones. Metazonites clothed with the usual very short hairs as well as more sparsely with the typical longer setae. Cauda in dorsal view subtriangular, with the caudal end bluntly rounded.

The general color of the body dull, or slightly brownish yellow, the color uniform, the head and caudal segments not abruptly darker, chestnut, as these parts are in *hirsutus*; legs a brighter yellow.

In contrast with the gonopods of the male in *hirsutus*, in which the blade of the telopodite is evenly curved and gradually narrowed to the distal end, the telopodite in the present species presents a long, thicker proximal division, which in ventral view is straight, and an abruptly narrower distal portion which curves ventrad and then cephalad. For details see the accompanying figure.

Segments of the male, 19, of the female, 20.

Length 5 mm., being thus smaller than the usual specimens of *hirsutus*.

Locality. PALMYRA ISLAND. 27 specimens taken by N. L. H. Krauss in February, 1948. The types are in the author's collection.

Some Notes on Preparing Whole Insects for Sectioning¹

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The ordinary run of insects have always presented many difficulties in the preparation of whole specimens for sectioning. While standard procedures have yielded quite satisfactory results with such soft-bodied forms as grubs, caterpillars, plant lice, and the like, they do not do so with even those relatively pliable types, such as flies and bees, let alone bugs and beetles. Consequently, when it became imperative that serial sections of whole bees be prepared, special techniques had to be sought out. The author was fortunate in developing a procedure whereby bees, softer beetles like Melyrids, and even the large black horsefly (*Tabanus atratus*) could be sectioned. Nothing he could find enabled him to section the adult weevils, dung-beetles, or the like.

FIXATION

Of the several fixatives tried, Gilson's fluid proved the most satisfactory. When it was employed on such insects as bees, flies, and melyrid beetles, the specimens remained pliable during the entire procedure, whereas in Bouin's, Zenker's, Hardy's, formalin, and Flemming's W.A. + 0.9% sodium chloride, the exoskeleton tended to become quite hard or brittle. With larger specimens, fixing was quite frequently carried out *in vacuo* with

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